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ABSTRACT

This report is a synthesis of an evaluation of the TRADEC (trades education) system to review its distinctive features and to assess its current effectiveness and future potential as a vehicle for the vocational preparation of young adults. (The TRADEC system comprises a family of schemes for the fusion of education and training into a curriculum design applicable to the needs of workers in occupations that do not require substantial training and are not catered for by conventional further education and training provisions.) An overview of the growth of the system is followed by a discussion of the distinctive features of the TRADEC system, including population, parameters of curriculum design, and structure and methodology. Next, the TRADEC approach is compared with other curriculum models. The comparative strengths of the TRADEC model are then examined, namely, acceptability to employers, liaison and the working partnership between the college and the company, acceptability to trade unions, ability to attract and maintain the participation of the intended target, and learner motivation. Divergence between intended and actual system performance as well as the potential of the system to educate and train a wide range of workers are also assessed. (Two data tables are appended.) (YLB)

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ED228448

FURTHER EDUCATION UNIT

A PROJECT REPORT

TRADEC I

An Evaluation of Trades Education Schemes

I Synthesis Report

Dr Karen Evans and
Alan Brown

Department of Educational Studies
University of Surrey

U.S. DEPARTMENT OF EDUCATION
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Dear Sir/Madam

TRADEC I - AN EVALUATION OF TRADES EDUCATION SCHEMES

The attached document is a synthesis report* summarising the evaluation of a collection of schemes of training/education which originated in Yorkshire and Humberside. The evaluation was carried out for the FEU by the Department of Educational Studies of the University of Surrey, and Karen Evans was the principal researcher.

One of the reasons why the FEU sought to evaluate TRADEC was its apparent unique position with respect to conventional day-release courses and to the less conventional emerging vocational preparation programmes. Other reasons included its potential for educating and training a wide range of workers, its acceptability to employers and unions, and its flexibility.

The evaluation is based on various key hypotheses. These will be found in paragraphs 39, 73, 87, 98 and 102.

The researchers conclude that TRADEC schemes in design have the potential to align themselves both with standards-based training and vocational preparation programmes; thus relating to NTI objectives 1 and 2. In operational terms however, there is more to be done: "the 'standards' issue will need to be tackled more convincingly in the light on new concepts of skill. In respect of... comprehensive vocational preparation, the system will need to develop its specification requirements for basic skills, its assessment approaches and associated monitoring and certification, ... experience and, particularly in the case of unemployed young people, its counselling and guidance functions."

They see however, in the foresight and initiative which led to TRADEC, much to admire. They describe it as "an evolutionary step, but not by any means the end of the line" and suggest that the time seems ripe for a review of its operation and way forward in the light of accumulated experience and knowledge.

It is hoped that this evaluation will not only contribute to such a review but will prove to be valuable reading to others who have watched with interest the development of this unique initiative in further education.

Yours faithfully

Jack Mansell

JACK MANSELL
Chief Officer

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* A longer report: TRADEC II elaborates on the evaluation process and presents the research findings more fully. TRADEC III will be on a more limited circulation and this describes and illustrates the research methodology.

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The objects for which the **Further Education Unit (FEU)** is established are to promote, encourage and develop the efficient provision of further education in the United Kingdom and for that purpose:

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b) to determine priorities for action to improve the provision of further education and to make recommendations as to how such improvement can be effected;

c) to carry out studies in further education and to support investigations of and experimentation in, and the development of further education curricula and to contribute to and assist in the evaluation of initiatives in further education;

d) to disseminate and publish information and to assist in the dissemination and publication of information about recommendations for and experiments and developments in further education.

The publications in this series of Reports are intended to inform teachers and others and to stimulate professional discussion about matters of concern to the FE service. The views expressed are those of the authors and are not necessarily those of the Units Board of Management. A limited number of extra copies of this report are available from

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FOREWORD

The evaluation study reported in these documents was commissioned from the Department of Educational Studies of the University of Surrey in January 1981, and completed in July 1982. The research brief was the investigation of the operation of the TRADEC system in order to review its distinctive features and to make an assessment of its current effectiveness and future potential as a vehicle for the vocational preparation of young adults.

The study was commissioned in response to the interest in the potential of the TRADEC system both as a vehicle for foundation vocational preparation and as a model offering a radical approach to day release education at non-advanced levels. The application of the system to adults has offered a third feature which commended the scheme for attention.

The system, initiated in the early 1970s, has extended to centres beyond those of its initial operation in Yorkshire and Humberside, notably in Scotland (co-ordinated through SCOTEC/SCOTBEC) Northern Region and the Midlands. The system is however still at a relatively early stage of its evolution, in terms of the general strategy for development formulated by the Yorkshire and Humberside Association of Further and Higher Education, and presented in *TRADEC – the principles and practice of trades education schemes* YHAFHE, 1982. This strategy is directed towards construction of a set of schemes achieving coverage of the entire occupational field and towards application of the TRADEC model to populations which extend beyond the currently predominant client populations of young people based in employment.

The evaluation of the TRADEC system has, therefore, been undertaken during a period of internal evolution and extension of the system. The study has also coincided with the announcement of the New Training Initiative. The many external factors associated with the major national policy developments which have unfolded during the period of research have impinged strongly on the system and its relationships with other forms of provision. It has, therefore, been a major task of our research, to attempt to locate the TRADEC system within the wider developments of vocational preparation associated with the New Training Initiative, and review it as an evolving system in a changing context, in terms of its potential for alignment and assimilation with emerging national systems.

The Yorkshire and Humberside Association for Further and Higher Education has, itself begun to explore and promote the potential of TRADEC outside its normal confines, in the wider context of the New Training Initiative. The Association is of the view that, not only should TRADEC be capable of making a contribution to the Youth Training Scheme and towards meeting the pre-employment needs of young people, but also that it has much to offer in terms of training and retraining of adults.

Through these activities YHAFHE is already addressing many of the issues identified as crucial to the assimilation of the system within the wider scene, and discussed in the research reports.

The research report is presented in three volumes. The first document, TRADEC I, contains a summary description of the TRADEC system and a synthesis of the principal research findings, reviewed in the context of the New Training Initiative. The second document, TRADEC II, elaborates on the features and intended operation of the system, and presents and discusses the research findings in full.

The first document is fully cross referenced, *by paragraph number*, to the second document, to allow the full report to be used selectively, if required.

The research methodology, including the full set of research questionnaires and schedules, is set out in a third document, TRADEC III, available from the Further Education Unit on request.

We have received during the course of our investigation, the full and generous co-operation of all colleges involved in the TRADEC system, and have been greatly impressed by the enthusiasm and commitment brought to the work by many of the staff with whom we have associated. We are particularly indebted to the Yorkshire and Humberside Association for Further and Higher Education who lightened our task considerably by providing quick and efficient responses to all of our requests for help in identifying the centres of operation, in establishing our contacts and in reviewing the operation and organisation of the system as a whole. We have, too, received the help and assistance of DES, MSC and the examining and validating bodies whose work most closely impinges on the TRADEC development. We are

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grateful to them for their full and open contributions to the development of our study. We wish to express our thanks to the members of the Steering Committee, under the Chairmanship of Jack Mansell, who have helped us not only with their advice but also in providing access to the 'up-to-the-minute' information we required to consider the TRADEC system in the context of emerging developments; also to the Visiting Fellows to the project, Keith Rowland of Tresham College and Dr Ron Johnson, Manpower and Management Development Consultant, who have helped us in developing our ideas and interpretations, and to Mary Rodgers and Linda Rowe who undertook the typing of the lengthy manuscripts, and enabling us to meet our deadlines.

Finally, our thanks goes to all those teachers, learners, company personnel and others who have contributed time and effort in completing research questionnaires, in engaging in interviews and discussions and in providing us with access to their activities and records. The high rates of response we received afforded us the solid information base needed for reliable evaluation, and we are indebted to all who helped in this way.

The approach brought to our work has been one of supportive evaluation designed to assist parties to the TRADEC system in decisions concerning its future growth and direction of development. We hope that our report will be considered in this light and that it will also serve wider needs, in addressing the issues and challenges faced by all who seek to develop and provide effective vocational preparation.

Dr Karen Evans
University of Surrey

Foreword

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Introduction to the TRADEC System

1. The TRADEC system is an initiative of the further education sector, designed to afford opportunities for learning and self development for the 'non-participant' majority. It comprises a family of schemes in which the prime aim is the fusion of education and training in a form of a curriculum design applicable to the needs of workers in occupations which do not require substantial training, and which are neither adequately nor appropriately catered for by conventional further education and training provision.

2. The TRADEC system was introduced in the Yorkshire region, under the auspices of the Yorkshire Council of Further Education, over a decade ago, predating the national initiatives in vocational preparation and in reorientation of skills training with which it is now associated. The system originated in the Engineering field. It emerged through an initiative of the Yorkshire Council designed to create on the phasing out of Craft Practice, a form of course able to respond to the needs of young people in occupations requiring some technical knowledge, understanding and skill, for whom Craft Studies courses were inappropriate by virtue either of content, standard or the assumption of complementary training. The application of the scheme model and methodology so developed, both to adult learners and to equivalent workers in other occupational fields, was asserted and subsequently tested. The 'general strategy of the development', as it currently stands (YHAFHE 1982:12), embodies a long term plan for scheme construction based on application of the TRADEC model to workers within the broad occupational zones of ENGINEERING, BUSINESS, CARING OCCUPATIONS, PROPERTY OCCUPATIONS, PROCESS INDUSTRIES and NATURE PRODUCTS. The set of 21 proposed schemes, supplemented by individual college- or company-devised schemes designed to meet special needs, is intended to provide full coverage for a stratum of the workforce across the entire occupational field. **[5–6]**

Aims of the Research

3. In seeking to meet the personal development needs of new entrants to employment and in seeking to align with changing training needs at a variety of skill levels, the system lies within the scope of the first two objectives of the Manpower Services Commission New Training Initiative. In seeking to create opportunities for continuing development beyond the young adult phase, it lies also within the scope of the third objective.*

In a time in which the national training systems are undergoing such rapid evolutionary change, the TRADEC system, by its early initiatives and, therefore, its accumulated experience of operation represents a point of development in that evolutionary line, which affords lessons and experience of considerable importance for the future.

4. The evaluation of TRADEC schemes was commissioned in order that, firstly, through examination of the operation of the system and its component schemes, the experiences and lessons afforded by the TRADEC system may be identified and disseminated, and secondly, that within the new and emerging systems of further education and training, the role and potential for extension of the TRADEC system may be assessed.

5. The aims of the research have been

(a) to review and comment on the distinctive features of the TRADEC approach, as compared with those of other modes catering for comparable target groups (with particular reference to the 16–19 age range);

(b) to assess the effectiveness of the TRADEC approach; and

and (c) to assess the potential of the system to meet the development needs of a wide range of workers.

The evaluation has combined survey, observational and case study methods** in the investigation of the design and implementation of the TRADEC system. The investigation has been embedded in wider comparative studies of the relationships between the system and its alternatives in the context of current re-orientations of educational and training provision.

*The objectives of the New Training Initiative are given in Appendix I

**See TRADEC III

Extent of Operation of the System

6. In 1981/82 twenty-eight TRADEC schemes operated in sixteen colleges in England and Wales (fifteen of these in Yorkshire and Humberside). Seven schemes, recognised during 1981/82 as appropriately designated and certificated as TRADEC schemes, operated in four colleges in Scotland. The operational schemes were

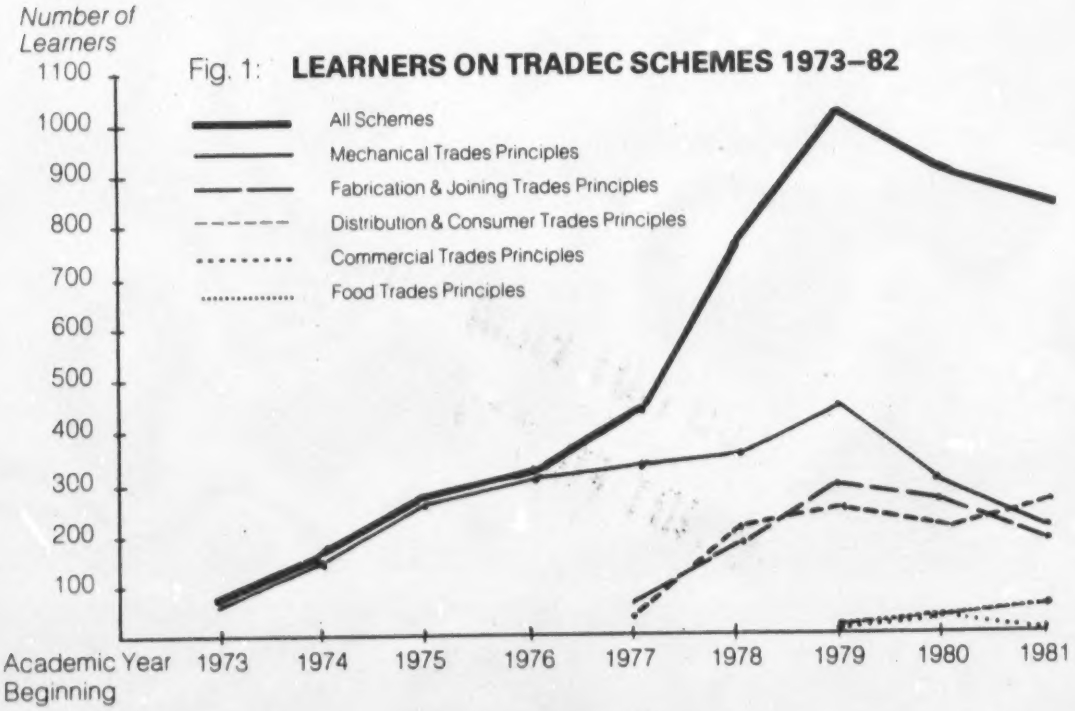
MECHANICAL TRADES PRINCIPLES (10 schemes)
FABRICATION AND JOINING TRADES PRINCIPLES (11 schemes)
DISTRIBUTION AND CONSUMER TRADES PRINCIPLES (11 schemes)
COMMERCIAL TRADES PRINCIPLES (2 schemes)
FOOD TRADES PRINCIPLES (1 scheme)

POWERED TRACTION and ELECTRICAL TRADES PRINCIPLES schemes offered in 1981/82 did not achieve viability. **[9–15]**

7. The growth of the system as new schemes and stages have been developed and implemented is shown in Fig. 1.* The TRADEC system was, in 1980/81 adopted formally by NCFE and SCOTEC/SCOTBEC, acting as free agents, by agreement with YHAFHE.

*The statistics underpinning the diagram are given in Appendix II

Fig. 1: **LEARNERS ON TRADEC SCHEMES 1973–82**



Distinctive Features of the TRADEC System

The TRADEC Population

6. TRADEC schemes are designed for those who do not require 'substantial training' in traditional terms and who have no place within the established systems of further education. (YHAFHE 1982:4) The occupations of these workers (described as 'operator-type' occupations) it is asserted, reflect widely varying types and levels of skill. These are the occupations which are most dramatically affected by and vulnerable to, the effects of technological change, and which can take on new dimensions of skill and responsibility as circumstances and operating conditions change.

9. The blurring of the traditional categories of 'skilled' and 'semi-skilled' workers, leading to concepts both of a skills 'continuum' and of new types of skill, is well recognised and well supported by evidence. Conventional further education provision, which assumes the existence of broadly equivalent workers requiring achievement of common standards, packages of transferable skills and supporting technical knowledge is inappropriate, proponents of the TRADEC system argue, in meeting the needs of the growing number of workers on the boundaries of change, as well as those of the traditional non-participants in the lower skill groups. That conventional styles of provision have long failed to make any substantial impact with the latter group is well recognised. (FEU 1980: 26–33)

10. In the 16–19 age range, with which this evaluation is principally concerned, the stated and intended target of TRADEC clearly falls within the 'vocational preparation' band whose target is defined residually (FEU 1981:11). Its target extends beyond that of vocational preparation, however, by virtue of its age transferability. The TRADEC system, its proponents claim, is, within the vocational preparation band, potentially adaptable to meet the needs of young people who are education-based or undertaking work experience, as well as those who are employment-based.* This is an important point in the context of plans for the development of a comprehensive system of vocational preparation based on the expectation of transfer between modes. At present however, the experience and established operation of the system is centred on young people in employment. Increasing experience is being gained in the accommodation within the standard employment-centred schemes, of young people undertaking work experience. Adaptation of the TRADEC system specifically for work experience groups is taking place on a substantial scale in one college. Only limited experimentation has taken place in respect of education-based groups.

11. The categories of 'need' which the TRADEC system identifies and seeks to serve are close to those identified and adopted as working bases for vocational preparation developments from their inception. The 'philosophy' of the TRADEC system addresses itself to the fundamental and universal needs for competence, self respect achievement and satisfaction in and through all kinds of work, for acceptable standards of living and quality of life and for means to self development and self fulfilment. It addresses itself also to the need for development of the capacities and attitudes which can enable young people and adults to meet these needs for themselves, now and in later life. It identifies, as characteristic of its intended target, the need to overcome the 'isolation' and confusion of the worker, the need for the confidence to face and adapt to radical changes in occupation and the need to achieve by means other than the academic. **[27–28; 129–134]**

12. The TRADEC system does not assume previous low achievement in school, low ability or low skill levels in work. In anticipating a wide range of skill levels in its target, it is differentiated from the original unified vocational preparation model, which characterised its intended target in terms of poor previous attainment and low skilled, simple and monotonous work. (TSA 1975)

13. The occupational circumstances and associated 'personal development' needs identified are translated directly into the aims and parameters of curriculum design which characterise the TRADEC system.

Aims and Parameters of Curriculum Design

14. The stated aims centre on the promotion of individual personal development in and through work. They embody assistance with work-related skills, stimulation of the participants' response to training, promotion of the direct contribution of the learner to his

*See Appendix III

work, and the development of the learners' capacities and motivations for continued learning and self-development. **[29]**

15. Accumulated knowledge of the nature and motivation of the learners, of their employers and of the practical, operating constraints, served to delineate the parameters of curriculum design.

16. The first of these centred on the essential *job relatedness* and *immediacy* of learning:

> 'The liability to change and the probability of relatively short tenure in many jobs makes it necessary to come to grips with the practicalities of the job immediately. Laying foundations of relatively abstract theory and a lengthy and gradual approach to the realities of working life is neither acceptable nor feasible' (YHAFHE 1982:9).

The need for job-relatedness is tackled, within the TRADEC system, by the design principle of the working partnership or triangular relationship between learner, college and company. The working partnership principle is a potentially powerful one for overcoming potential learner and employer resistance, with the implied safeguard that learning will be dictated neither by employer requirements nor immediate learner wants nor by educators' prejudices, but by negotiation between three perspectives on need and worthwhileness.

17. The second parameter was that of the *incentive to the learner and to the employer* to participate. In an area of provision in which learners have traditionally been associated with poor motivation, and employers with unwillingness to release (FEU 1980: 26–29). Incentives must be present for success, extending beyond those of purely financial benefit to the employer.

The need for incentives (combined with job relatedness) is translated into the design principle which requires the scheme 'materially to assist the individual and the company', by undertaking activities of immediate practical value and application in the workplace or elsewhere.

18. The third parameter was that of *ability to accommodate* successfuly *individuals of widely differing ability levels and occupations*, necessitated by the diversity in the characteristics of the intended target.

The need to accommodate widely different groups and changing circumstances translates into the third key principle of design – that of a common and uniform frame or anatomy of operation applicable within generic occupational groupings or 'families'.

19. Another set of parameters determing the system are organisational and logistic ones, arising from the necessity for practicable and economic operating mechanisms.

In particular, the need to maintain, economically, a system which is responsive to change and adaptive to a variety of groups is also served by the design principles of joint college-company operation and of common scheme anatomies for generic groupings. The avoidance of proliferations of schemes and the automatic self updating which the correct application of process should produce, lead to a system and development strategy which is both supportable and economic, it is claimed.

Distinctive Features of Structure and Methodology

20. The search for a structure able to translate these principles into a working curriculum resulted in the 'tree' and 'unit' structure with its associated methodology, which characterises TRADEC schemes. **[30–36]**

21. Its four distinctive features are:

(i) Uniformity of style and method of operation, adopted on the premise that this would encourage effective management, allow quality control and rationalise staff development and administrative procedures

(ii) A scheme *structure*, based upon a 'tree' defining, by its 'branches', possible points of progression within divisions indicating areas of 'broad specialisation' from Stage 1 to Stage 3 and, by its 'spread', the range of occupations which the scheme is intended to serve. The structure comprises ten units in each stage and division describing the content of the scheme. Each unit is constructed as an array, one dimension of which presents a limited number of selected technical topics, the other specifying five curriculum elements intended to be 'indicative' of teaching objectives. The units are constructed
– to furnish basic technical information and understanding of generic application, selected

as that which will be required wholly or in part by workers within the occupational areas covered by the scheme, whatever combination of skills characterises their specific job
- to meet learning objectives, agreed by parties to the process, through group or individual projects.

(iii) Prescription of the basic information and supporting studies elements only. This is intended to allow for *alignment* of the scheme with individual and company requirements through the operational outlines (elements designed to achieve 'consolidation and comprehension') and project elements of the curriculum, which can be selected to provide the emphasis required by the scheme 'users' and 'consumers'.

(iv) The requirement that the scheme should 'bring into use' employers plant and processes and be based at least partially in the workplace, involving company personnel in the process. **[30–37]**

Comparisons with other Curriculum Models

22. These features represent the distinctive features of the TRADEC operation. The feature of *uniformity of style and method* distinguishes the TRADEC operation from that of the wider UVP programmes and vocational preparation schemes based on work experience in which wide variations of style and method have been admissible within broadly defined guidelines or criteria of operation.* The 'uniformity' adopted in TRADEC is however differentiated from that characterising conventional modes by its emphasis on uniformity of process rather than that of content or objectives.

23. The identification and prescription of generically applicable technical information and knowledge distinguishes the TRADEC approach from those of the evolving approaches now held to be characteristic of the vocational preparation band,** in which concepts of core content and transferability centre on the idea of basic skills'.* Specification of basic skills objectives in a form appropriate to learners engaged in 'foundation' vocational preparation, would serve to limit, to some degree, the age transferability and adaptive nature of the system. The question of the need for required specification of basic skills at college level, in forms appropriate to different client groups, arises.

24. When compared with 'conventional' courses the identification of generically applicable information clearly distinguishes the TRADEC approach from that adopted in the specialised Operator and Craft courses of, for example City and Guilds. However, the 'master syllabus' approaches now being adopted by City and Guilds in the Engineering field (City and Guilds 1982), based on generic approaches and proposing 'selections' for non-traditional workers and workers below the multi-transferable craft skill level, would seem at this stage to align with the TRADEC approach in respect of scheme content. In other fields of 'operator' development the college- or company-devised specific skills courses validated by City and Guilds and attracting substantial success with all age groups, represent the types of specialised scheme which the TRADEC approach has sought to avoid for reasons of economy of operation.

25. Similar considerations apply in respect of social and life skills. The movement, within the wider vocational preparation development, to incorporate SLS as an integral element of 'basic skills' is, on the one hand, aligned with the fundamental TRADEC concepts of integration in SLS. On the other hand, however, the movement towards the specification, preferably to accepted models,** of these basic skills again represents the point of distinction between the current TRADEC approach and emerging vocational preparation models, since the TRADEC system does not require specification of these elements in these terms. Again, age transferability is an issue, but one which could be resolved in respect of conditions and requirements for particular groups. **[38–40]**

26. The mechanisms for alignment of TRADEC are distinctive when placed in comparison with other UVP initiatives for employment – based young adults

*The current changes in UVP, and its incorporation under the NTI umbrella from 1983 renders comparison difficult. Comparison is made in respect of UVP models and their implementation up to 1981/82.

**See FEU, 1981 *Vocational preparation.*

*As defined in FEU 1982 *Basic skills.* The notion of "core skills" under development by MSC is compatible with FEU definitions.

**See FEU, 1982 *Basic skills*

meeting similar challenges in respect of employer acceptability. The TRADEC system differs from that of the wider UVP programme in the norms of employer involvement which are associated with its operation. Although in neither system is a company-based programme a requirement, the norms of UVP operation include the expectation of company-based elements, comprising different combinations of induction training, job rotation or some other form of planned experience or training, and involving company staff specifically designated as industrial tutors. This represents a point of difference from schemes on the TRADEC Model, in which the norm for intended operation is that some part of the project work of the scheme is undertaken in the workplace with some involvement of company personnel in provision of supervision and assistance. **[214–222]**

27. The evaluation of the TRADEC development in Scotland involving monitoring of the UVP-funded TRADEC schemes against criteria used in evaluating UVP led to the conclusion that

> 'Although the use of project work, by demanding close liaison with, and co-operation from, employers has led to a higher degree of employer commitment than would be the case in normal further education courses, this level of commitment is still less than would be expected in a UVP scheme where in-company training programmes form an integral part of the scheme' (JSSACTS 1981)

28. The 'working partnership' principle in TRADEC potentially aligns itself well with another emerging criterion for vocational preparation: that of inter-agency and client-teacher negotiation in respect of learning programmes. However, methods and bases for negotiation, in its full sense, are not well developed, in common with many other schemes of vocational preparation, and are not a requirement of the TRADEC system. The 'working partnership' may more appropriately be considered, at this stage, to afford opportunities for suggestion and choice rather than the three-way negotiation of the set of learning activities and/or objectives. **[179–193]**

29. In general then, the TRADEC system adopts a set of mechanisms for adapting scheme specifications to individual and industrial needs at college level rather than a fully negotiated curriculum design and development process between the three scheme partners. In this, it is differentiated from a substantial part of the UVP programme which seeks to develop its schemes in this way, but aligned with some other UVP programmes, particularly those developed from an ITB base, which work to a standard framework or model (NFER 1980: 48–69).

The TRADEC approach of matching scheme 'anatomies' to individual and company needs is also consistent with that adopted in the transitional courses of TEC/BEC, but differs in its rejection of the 'core and options' formula for achieving alignment with needs. The degree of teacher responsibility, at college level, in developing and adapting objectives, content and method to meet needs serves to align TRADEC with the 'new FE' rather than any other band of provision. **[675–682]**

30. In the sphere of assessment, it is the existence of a formalised assessment procedure which has in the past distinguished TRADEC from other provision under the UVP umbrella and from off-the-job provision associated with the YOP programme. It is now the nature of that assessment process and its associated certification form that distinguishes the TRADEC approach from the evolving model of vocational preparation. Profile assessment and certification is far from achieving a 'steady state' in its development. However, the essential ingredients of an end product which provides a statement of competences within and beyond the 'basic skills' core, by virtue of which a young person's areas of strength and of need for development may be identified and built on in subsequent programmes, are not provided by the TRADEC certification profile. (FEU 1982b)

The interaction of assessment with counselling and guidance as stressed by vocational preparation formulations emphasized in the model. The employment base of many of the participants leads to less importance being attached to this element than would be the case in a scheme centred on the unemployed. The increasing use of the TRADEC system for mixed groups incorporating substantial proportions of work experience based learners raises some questions concerning the emphasis on guidance and its link with assessment.

31. The TRADEC system, while not fully aligned with emerging vocational preparation models, is clearly distinguished from other models under development by its rejection of prescribed standards and universal

norm and criterion-referenced assessment procedures. YHAFHE asserts that

> 'absolute standards cannot be obtained across such a wide and varied range of occupations' and further, observes that it has no evidence that such standards are 'significantly required'. In practice, norm-referencing to the immediate peer group is the assessment approach most commonly used in individual schemes. **[476–497]**

32. Important differences exist between the Scottish TRADEC development and that originating from Yorkshire and Humberside. The adoption by SCOTEC of a centrally set end-test based on an objectives 'item-bank' represents an attempt to standardise some parts of the assessment including that of progress in basic skills, to define expected standards of operation and to place a requirement on the curriculum for specification and adoption of these objectives within the learning programme. SCOTBEC too have moved from a marks-based to a crude criterion-based system leading to allocation of grades. These are areas of controversy at present, each approach having clear advantages and disadvantages. While preference for one system over another depends largely on educational 'stance' rather than greater proven effectiveness of one system over the other, in terms of learning outcomes, it remains that the certification format of the standard TRADEC development does not communicate areas and levels of competence of learners to employers and others, and does nothing to facilitate the development and formative use of the types of assessment processes now under construction and achieving acceptance within the vocational preparation field.

33. In its flexibility of mode and 'length' of learning programme, the TRADEC approach is aligned with current developments in vocational preparation. Beyond that, it is compatible with the variety of open and flexible modes for adult learning under development in e.g. open tech and flexi-study schemes. In defining minimum length in terms of time required to achieve at least minimum coverage of content and completion of requisite assignments, the approach is differentiated from that of pre-vocational full time courses on the ABC model, in which it is considered that 730 hours is a minimum for adequate coverage, and from that of other UVP models, which place some requirements on time in the absence of uniform specification of levels of content coverage and of assignments. The mode of operation in terms of operational base, is more limited that that of unified vocational preparation or the new programmes proposed under NTI.

34. Since TRADEC is essentially a college-managed system, with space for development and validation of company-devised initiatives but little experience or thrust in this direction to date, the operating modes are, in practice, more constrained than those found in UVP.

35. The TRADEC system, therefore, is aligned in some aspects of its design and operation, with essential features of evolving vocational preparation models*; in others it can potentially accommodate these essential features by introduction of requirements in respect of young adults in the vocational preparation target. In some other design features it is more closely aligned with FE developments associated with new models of skill training, reflecting perhaps the areas of potential convergence of NTI objectives 1 and 2.** It is the system's intended alignment with adult needs, to return to objective 3, which would be limited by prescribed specification of vocational preparation requirements at design level and reduce its scope as an adaptive system. The extent to which the model can accommodate adult needs and curriculum features appropriate to adults could be a subject for further study.

*For summary of essential features, see FEU, 1981 *Vocational preparation*, 21–23

**See Appendix I

Claims Concerning Operational Effectiveness

36. Proponents of the TRADEC system claim it to be fully successful, if operated according to the prescribed methodology, in:

(a) attracting and maintaining the participation of the non-participant majority;
(b) securing learner motivation and employer commitment;
(c) aligning itself with changing individual and company needs;
(d) accommodating groups of workers widely differentiated in terms of occupation, age, ability and attainment;
(e) achieving economy of operation.

37. It claims that it is more able than the conventional or 'orthodox' models, of which it represents 'the inversion', to attract and maintain the participation of those in operator-type occupations. It points, in particular, to the lack of impact made by previous courses on the conventional model. This failure it attributes to the latter models' generalised assumptions of need which match real need poorly, to their inability to keep pace with change and their difficulties of achieving viability in proliferations of specialised courses within occupational bands. It claims greater effectiveness in its operation both as a system and form of provision than the wider UVP programme and its component parts. Its relative strengths here are claimed to lie in its economy of operation, the opportunities it affords for progression and its ability to provide a broader body of transferable knowledge as a foundation for later development.

38. Hypotheses were developed for the evaluation following a preliminary period of consultation and initial scan of operation of the system. These concerned the effectiveness of the TRADEC approach when asssessed both against its own criteria and against those provided by knowledge of the operation of other systems.

Comparative Strengths of the TRADEC Model (Hypothesis I)

39. It was hypothesised that
'The TRADEC system embodies an approach to vocational preparation which demonstrates strengths, relative to other modes, in its acceptability to employers and its ability to attract and maintain the participation and motivation of the traditionally non-participant target groups.'

Acceptability to employers

40. The acceptability of any given scheme to the user companies was determined, to a large extent, by the way in which functions of the scheme to which they subscribed were perceived and understood. In the Engineering Zone, a majority of responding employers perceived the scheme in almost entirely traditional terms, i.e. as a course, undifferentiated in its aims and structures, from conventional courses. The acceptability of the scheme for these employers rested on its ability to provide development in technical skills and/or supporting technical knowledge for young employees preparing for higher skill occupations. The schemes in question were found acceptable in these terms by the majority of companies using them. **[336–382]**

41. Among companies perceiving the scheme as a new type of provision catering for former non-participants (located mainly in the Business Zone) acceptability to the company rested to a larger extent on the impact of the schemes on affective/personal dimensions of development, as these related to the company's work. The schemes in question were found acceptable in these terms by the majority of user companies. **[383–420]**

42. In the Distribution field, the scheme was considered by many of the larger companies as a very minor adjunct to the in-company job training provided by the company; their expectations and acceptance of the scheme were modelled accordingly. **[390]**

43. *Alignment* with company needs was generally 'fair-to-good' and recognised to be so by most users. The relevance and realism afforded by the schemes' practical orientation and application was widely considered to be a particular strength, and one which had commended the use of the scheme in preference to alternatives. Alignment with employer expectations and preconceptions, in cases where these ran contrary to the TRADEC intention and philosophy, also took place in some instances, and

undoubtedly accounted for some of the 'employer acceptability' enjoyed by the schemes in question.

[340–343; 363–365; 390–393; 410–418]

Dissatisfaction with alignment to company needs was nearly always associated with poor liaison and communication between the college and company.

44. There was general satisfaction with the *progress and achievement* of learners in TRADEC schemes, on the part of their companies. Expressions of dissatisfaction were most common among those companies which brought a traditional perspective to bear on the scheme. Inadequate progress in areas of job specialisation and inability of the scheme to 'stretch' and 'challenge' the learners sufficiently were the main points of concern.

[344; 366; 395; 412; 418]

Liaison and the Working Partnership

45. The liaison and communication between the college and the company was almost universally welcomed by company personnel at all levels, and often seen as a point of considerable 'improvement' when set against conventional courses formerly engaged in. A 'working partnership' was considered to operate effectively from the employers' perspectives, where this was understood to be a feature of the scheme. The partnership was rarely seen as a three-way relationship, and was frequently seen in terms of the company 'informing' the college of its requirements, and of the college 'responding' to these rather than in terms of a joint, cooperative venture. Provision of materials, project drawings, etc. was the principle tangible expression of working partnership for many companies.

[341; 362; 389; 413]

46. Little evidence was found of general employer preference for Business Zone TRADEC over other courses in the Business area available for the target group, although several large companies were enthusiastic TRADEC converts, seeing TRADEC as more suited to their needs by virtue of its practical nature. In the Engineering Zone, companies which had formerly used City and Guilds operator courses for this group held a strong preference for TRADEC on grounds of its greater relevance and applicability. Where the distinction was known and understood, TRADEC had greater acceptability than the City and Guilds Craft options open to those unable to provide complementary training.

[383–404; 336; 382]

47. Factors important in the greater ease with which TRADEC has secured participation of companies, particularly in the Engineering field, in comparison with other schemes developed under UVP, appears to be attributable partly to automatic placement of day release students in TRADEC without the employers decision, and partly to the wider target. **[167–169; 135–149]**

48. Selling to employers, however, remains an intensive and demanding process in all schemes. It is to this selling activity that part of the success of TRADEC in the Distribution field can be attributed. Comparable intensive recruitment of former non-participants is not generally undertaken in respect of alternative forms of provision.

[61–66; 70–128]

49. Employer withdrawal from the scheme was due in 90 per cent of the cases followed up, to the lack of personnel in the intended target ranges (as these were perceived by the employer). Withdrawal was therefore regarded as temporary in most cases. Other reasons for withdrawal which occurred were the decision to place the learner(s) on an alternative course more appropriate to their demonstrated ability, or the greater suitability of length/organisation of an alternative course to the company's particular needs. **[421]**

Acceptability to Trades Unions

50. The TRADEC approach intends that trades union cooperation should be secured at the level of the user companies, through the 'triangular relationship'. The responsibility rests with the employer to inform and gain cooperation of the relevant trades unions in respect of the company's participation in the scheme. The trade union perspective will thereby be represented in the company's dealings with the college, over the scheme. This is, in some respects, a simple and attractive approach to trades union involvement. In practice, however, the degree of misconception among employers concerning the nature and intentions of the scheme, and the degree of commitment to the triangular relationship, suggests that the intended involvement materialises only

rarely, and that the base of any claimed acceptability is suspect.

51. Trades union participation in steering committees is less actively sought in TRADEC than in many other UVP initiatives. A lack of involvement of T U representatives at steering committee level appeared sometimes to stem from an assumption by college staff that they would not approve, did not facilitate and/or could not help. That trade unions might scrutinise the status of participants (and with regard to those on work experience, the kind of jobs and training given in the Company) is not a disadvantage if individual schemes do seek to reach their intended 'target' population, and could indeed be an advantage in obtaining day release for the traditional non-participant. However, Trades union officers themselves acknowledged that their consistency of participation and responses to requests to participate were not always as enthusiastic as they should be.

52. At regional level the principles and intentions of the TRADEC development received the support of officers of AUEW, TGWU and USDAW, with the provison that its operation was confined to the intended target and that it was not used by employers as a means of eroding an obligation to give more comprehensive training.

Ability to Attract and Maintain the Participation of the Intended Target

53. 91.3 per cent of participants in the surveyed schemes were in the 16–19 age range. The large majority of post-19s participating in the schemes were in the 20–24 age range. **[163–165]**

54. The attainment range of the actual client population was widely spread from the level of no qualifications held to A level. Its modal level of ≥3 CSEs (1,2,3) <4 Os was comparable with that of the UVP model in its pilot stages. **[166]**

55. Approximately one-third of all companies reported that they had formerly engaged similar groups of workers in alternative courses. These included City and Guilds Craft Studies, City and Guilds Operative courses, BEC, and social and life skills courses (in the case of WEEP trainees). **[359–360; 337; 383; 406–407]**

56. Few participants had previously participated in other F E courses. In cases where they had done so, it was usually the case that they had been transferred to TRADEC for reasons of the unsuitability of the original placement. **[170–176]**

In the case of BEC, a significant number of holders of BEC General at Pass level entered TRADEC Stage 2.

57. The occupational groups in the operational schemes represented a variety of different skill levels. In the Engineering Zone, participants included those preparing for fully skilled craft occupations, for specialist highly skilled occupations, and those not directly involved in mechanical engineering but working in a context requiring a general appreciation of mechanical trades. In the Business Zone, participants ranged from management trainees in retailing to warehousement and office juniors. Participants tended to be clustered at higher skill levels in Engineering Zone schemes. In Food and Distribution schemes participants were 'spread' in terms of skill level. In Commercial Trades Principles, participants clustered at low skill levels. Most schemes involved increasing numbers of work experience participants. Involvement of these groups was particularly marked in Commercial Trades Principles. **[135–162]**

58. The range of occupations covered by operational schemes was narrower than the literature suggests. Most schemes clustered around a core of occupations in each band, e.g. sales assistants in Distribution schemes, apprentices and production trainees in sheet/plate metal work in Fabrication & Joining schemes.

59. Once schemes had established a core of users they were, in most cases, able to maintain the viability of the scheme, and to maintain the characteristics of the participants in later schemes. There was little evidence of 'upgrading' other than that associated with effects of excess of supply over demand in the labour market. **[66–67; 70–128]**

60. Schemes experiencing difficulty in attracting and maintaining participants in the period of recession were the pilot schemes of Commercial & Food Trade Principles. The Powered Traction and Electrical schemes offered for the first time during the period of the study were without exception unable to secure viable groups. **[119–127]**

61. While the scheme has certainly had a far greater degree of success in reaching the non-participant than the former operator courses, or other conventional forms of provision, it has demonstrated less success in attracting its intended target in some areas, than have, for example, the new Specific Skills Schemes of City and Guilds in the Food/Hotel and Catering fields, over the same period. Recession, therefore, cannot be held entirely responsible. **[692–700]**

62. The extent to which schemes can legitimately be considered to be successfully filling the gap in existing provision as intended, varies by scheme. It would appear that TRADEC is clearly meeting unmet needs in Distribution and Consumer fields at all skill levels within its intended target. In Engineering Zone schemes TRADEC is successfully meeting unmet needs at high but limited skill levels, and in providing a route to City and Guilds Part 2 Year 2 and onwards for participants not receiving complementary training. The scheme is missing, however, the lower skilled operatives in this zone and there is no evidence of any thrust being made in this direction. In the other pilot operational areas, there is insufficient evidence for judgments to be made about the capacity of the schemes in the longer term to go into areas of unmet need – it is sufficient to say that they are not finding at this time, a market. **[135–162]**

Learner Motivation

63. There was evidence that the TRADEC model, when operated as intended with learner involvement in the three-way partnership, does engender good learner motivation.

64. In practice the intended operation of the system in this respect is rarely achieved. Learners judged their own motivation to be dependent on four factors:

- experience of the scheme itself;
- attitudes of the company;
- clarity of individual goals;
- degree of participation in scheme decisions.

Factors appearing to act against learner motivation in the case study schemes were:

- learner uncertainty about scheme goals/the nature of the course;
- a perceived lack of direct relevance of work undertaken to learners day-to-day experience of work. **[304–329]**

The latter is a point of importance. The intentions of the scheme to secure 'immediacy' and recognition of direct relevance by the learner is fundamental to its design. In comparison with the picture afforded by data on the operation of UVP scheme, in which perceived lack of relevance is not indicated, the TRADEC approach as currently implemented does not stand well.

65. Initial learner motivation was shown to be very low in some instances, reflecting:

(a) lack of information/consultation about the scheme from their company;

(b) generalised negative attitudes to 'education'.

In cases in which alignment to industrial and individual needs is actively pursued, there is evidence of learner motivation increasing as the scheme proceeds as the goals and intentions begin to become clear. **[294–303]**

66. In terms of 'gains to the learner', there was generally a good match between learners' assessments of benefits gained and the schemes' orientation and intentions (which themselves varied considerably within and between scheme types). Scores on indices of 'general self development' benefits and 'job related' benefits perceived by learners discriminated well between schemes. **[231–241]**
The schemes were therefore able to produce a range of learner benefits, the emphasis in any individual scheme was determined largely by the priorities and approaches brought to the scheme by the Course Tutor.

Learner Fall-Out

67. Levels of learner fall out were comparable with those found in UVP, averaging at 10.1 per cent in 1980/81, ranging between 7 per cent (Mechanical Trades Principles) and 14 per cent (Fabrication and Joining Trades Principles). **[318]**

68. Intentions to proceed to subsequent stages were widespread. They were more important as evidence of motivation in the Business Zone, since in Engineering schemes, to follow three stages end-on was considered

to be the norm. Intentions also tended to reflect their Company's policy over release as well as extrinsic motivation arising from the general employment situation – any activity which enhanced one's prospects of keeping one's job was worth pursuing.

Costs

69. The claim concerning economy of operation, both at regional level and at the level of individual schemes, was also investigated as a potential strength.

70. The 'order' of cost of development and maintenance of individual schemes at college level was high in comparison with conventional courses and broadly comparable with UVP schemes. In the first case higher cost is attributed to the substantial liaison time required. Cost savings in respect of use of employers premises and staff were negligible, but in respect of materials, savings could be substantial in the Engineering Zone schemes. **[509–531]**

Slightly lower cost levels than those associated with UVP can be achieved through the reduction in preparation and submission time afforded by use of the standard format, counterbalanced by the lower level of input by company personnel found in TRADEC.

71. The operation of the system as a whole would be both supportable and economical at regional level, given substantial expansion of the programme, by virtue of its use of generic schemes and circumvention of course revision processes at Committee level. **[498–508]**

72. In respect of the first hypothesis, it was therefore concluded that in its acceptability to employers and in its ability to attract and maintain the participation of the intended target group, the TRADEC system could be considered, broadly, to demonstrate strengths in comparison with conventional and vocational preparation provision of its established areas of operation.

Reservations lie in:

(a) the frequency with which employer acceptability is based on misconceptions about the nature and intentions of the scheme, despite 'working partnership';
(b) the apparent inability to make large inroads into operator level groups in the Engineering Zones;
(c) the recruitment difficulties in new schemes, which cannot be attributed entirely to the effects of recession.

In respect of learner motivation, the model when operated as intended can secure the desired or claimed levels of learner motivation. Schemes in practice persistently diverge from intended operation in respect of learner involvement in the triangular relationship. The results indicate that this is an important factor in undermining the relevance of the scheme to the learner and, by association, learner motivation.

Comparison of Actual and Intended System Performance (Hypotheses II & III)

73. It was hypothesised that
'there is significant divergence between intended and actual system performance in
- the extent of the triangular negotiation process
- degree of employer involvement
- the extent of curriculum adaptation within the TRADEC methodology
- structure and uses of continuous assessment processes.

The Extent of the Triangular Relationship

74. A level of communication and contact considerably higher than that associated with conventional schemes was in evidence in the large majority of schemes. The relationship was in reality more frequently a two-way relationship between college and company personnel. Learners were seldom involved or regarded as capable of making a full contribution to such a relationship, and rarely experienced consultation about scheme content and emphasis beyond that associated with choice of project. This level appeared lower than that found in many UVP schemes. **[179–193]**

75. The relationship was essentially one of familiarisation, and limited consultation and exchange between college and company staff, rather than the full working partnership in the sense intended by the system – a point which explains persistent misconceptions about the scheme among a singificant proportion of users.

Degree of Employer Involvement

76. Employer involvement in the system as a whole was lower at Committee, Writing Group and Steering Group levels in comparison with conventional/transitional courses. The system again intends that employer involvement should operate principally at the level of the 'working partnership' and is therefore less significant at Committee level.

Involvement was:
- successfully secured in the industrial assesment feature of the scheme;
- limited in support/provision of in-company activities in comparison with other UVP schemes;
- substantial in the provision of materials and equipment (particularly in the Engineering zone); **[331–335; 214–230]**
- limited in respect of planning of the learning programme, to choice of possible projects (in most cases). **[180]**

77. Where good employer involvement was established in the form either of in-company support, or in direct and substantial inputs to the college-based scheme, learner gains were apparently enhanced, again proving the TRADEC model, and reinforcing the UVP experience. The major project, in these cases, proved to be a feature of particular strength, able to fulfil its intended function as a major vehicle of learning, involvement and motivation whatever its location. **[250–293; 308–311]**

The Extent of Curriculum Adaptability

78. Substantial variations in curriculum implementation were in evidence, ranging from stereotyped translation of the scheme booklet to a degree of flexibility which ignored even the basic tenets of the system, and which resulted in some cases, in strings of loosely linked topics with no identifiable structure or rationale. **[194–208]**

79. The space provided by the system for adaptation to meet variable learner and company requirements was used to some degree in most schemes, although not as fully as is intended. The substantial experience gained of adaptation through project work and assignments is producing effective operation in these areas. Adaptation in curriculum emphasis and organisation of learning was not much in evidence. Over-reliance on the specification was frequently found, manifested in straight translation of scheme components and topics into the daily timetable and week by week programme. There are some comparisons here with the local adaptability of TEC and use of standard units. **[201–209; 453–457]**

80. Adaptation of the learning programme to individual learner needs was generally poor, as reflected in limited learner involvement and consultation, perceptions of lack of immediate relevance etc.

81. Where the model is fully adhered to, there is evidence that good alignment and adaptation to needs

can be achieved. A factor which militates against this in any given scheme is a high number of user companies. **[191–193; 305–324]**

Structure and Uses of the Assessment System

82. The assertion of the importance to learners of assessment relating to achievement and certification was supported by the research findings. **[491]**

83. The assessment system was not well known or understood by the learners; even less so by most company personnel, other that those with experience in industrial assessor roles. In most cases neither the learner nor the employer was an active party to the assessment process. **[483; 487; 489]**

84. The approaches used in practice did seek to assess over a far wider range of capacities and attitudes than would normally be the case in a conventional course. These were, however, only loosely specified in most instances, both in the cirriculum and in the assessment scheme. **[750]**

85. There were few instances of the assessment approaches being used formatively. Only a small proportion of learners had experienced any regular feedback and discussion of marks or progress with college or company staff. **[489]**

86. The assessment approaches adapted within the general assessment system were predominantly norm-referenced to the specific peer group and therefore potentially competitive within the peer group, a point which can act against feedback and formative use if non-competitiveness is valued. **[482–489; 750]**

87. It was further hypothesised that major factors influencing the degree of divergence between actual and intended system performance in any given scheme, are:

- atitudes, experience and preparation of the staff team in respect of the TRADEC approach;
- participating employers' perceptions of their roles and responsibilities and those of the colleges, in the education of their young employees;
- adequacy and efficacy of stragegies for monitoring the implementation of new and existing schemes;
- the 'gap' between staff time necessary and staff time allowed for effective liaison and management work.

88. In divergence which occurred in the operation of the triangular relationship, there was evidence that traditional views of the status and role of the learner among the staff team, company personnel and the learner himself frequently acted against full and effective learner involvement in the partnership. The perceptions of the scheme specification, too, appeared to limit the scope for operation of the full partnership. **[183–190; 304–329]**

89. Divergence in employer involvement, where it occurred, was associated with insufficient or ineffective industrial liaison usually caused by a combination of factors –

(i) large numbers of participating companies
(ii) insufficient liaison-time
(iii) lack of enthusiasm and commitment on the part of the course tutor
(iv) a preference of some employers for 'leaving it to the college' because of the time commitment involved in partnership. **[333–422; 214–230]**

90. The following factors appeared to be important constraints on levels of employer involvement in the provision of company-based activities, and in integrating the college-based schemes with existing in-company programmes:

- that of the standard scheme model, which, used less flexibly than intended by the course tutor and perceived as a 'given' by the employer, did not facilitate cooperative working in the development of unified or integrated programmes. This feature was shared with UVP schemes based on standard models. **[709–727]**
- the difficulty encountered by college-managed schemes in developing delivery and monitoring mechanisms for in-company elements, in comparison with ITBs. **[714]**
- placement of learners onto TRADEC by the college, without active consultation leading to decision and commitment of the employers, tends to undermine opportunities which might exist for direct involvement in e.g. company-based activities. The development from the outset of the expectations of this type of

involvement in a new style of learning would appear to be an important ingredient of success, as in UVP. Attempts to introduce ideas of direct involvement and partnership post-hoc clearly meet with lower success. **[167–169; 702–727]**

91. Divergence in respect of adaptability and alignment was on the whole not attributable to lack of staff awareness or expertise but rather to practical operating constraints in cases in which needs and demands were widely differentiated and little support in respect of scheme management was forthcoming. **[718–719]**

92. The tendency for the scheme specification to be perceived as fixed by learners and employers, with the outcomes on scheme operation already described, was also important here, reinforced again by the NFER UVP findings of the disadvantages of the standard scheme model. **[186–190; 333–422]**

93. The content coverage requirements resulted in loss of flexibility in some instances, through attempts to achieve the depth considered necessary for the group, and in superficiality in other instances. Opportunities for flexibility in implementation of the model were well perceived by most course tutors, although there remains a 'cloudiness' in understanding concerning the essential and optional content coverage requirements. **[434–460; 203–208]**

94. Divergence in uses of assessment, by contrast, was frequently attributed to:

a. lack of staff expertise and awareness of assessment issues
b. nature of assessment forms, which were not facilitative of the assessment ethos to which the system as a whole subscribes. **[476-497]**

95. In general, divergence between actual and intended system performance was a source of anxiety among TRADEC proponents. The moderation system appears to be insufficiently developed to cope with the demands of the expanding system. Its superficiality and its limited efficacy in dealing with substantial divergence, where it was found, was widely noted. Its approach in using experienced practitioners and its support (as opposed to inspection) function are, however, attractive features of the system. **[424–432]**

96. Other areas in which staff expertise was critical in maintaining intended operation were as follows:

- drawing in of wider non-traditional bands of workers, which requires a degree of 'selling' expertise not possessed by many college staff; **[467–472]**
- treatment of SLS, which suffered from persistant polarisations of view concerning the status of the component and its relationship with other parts of the scheme. Where integration was rejected and SLS offered as a separate component, there were instances of ineffectiveness, unpopularity and poor linkage with the remainder of the scheme. Where integrated, the SLS element was all too easily swallowed by the prespecified technical content, although there was, equally, instances of successful integration where substantial resources and planning had been put into it. Lack of staff expertise in the development of new curriculum forms for SLS appropriate to the schemes and entrenched attitudes to General Studies were large factors in divergence from intended operation, here. **[210–213; 458–460; 733–737]**

97. Divergence between intended and actual system performance in the hypothesised areas was, therefore, seen to be caused principally by:

(a) persistent employer misconceptions;
(b) practical operating constraints.

Only in respect of learner involvement, assessment and the treatment of SLS was insufficient staff expertise and experience a major factor contributing to divergence.

The Potential of the System to Cater for a Wide Range of Workers
(Hypothesis IV)

98. It was hypothesised in respect of the potential of systems/models to educate and train a wide range of workers that the

(a) TRADEC model would demonstrate strengths relative to conventional courses in its design and methodological features which anticipate and provide a framework for accommodation of a wide range of occupational and personal characteristics and needs in the learner population

and that

(b) principal limiting factors would be the lack of adequate curriculum strategies to deal with the demands of the broad generic groupings in their present forms, and the availability of necessary staff expertise.

99. Investigation of the design and methodolgical features has served to verify the relative strengths of the TRADEC approach in its capacity to support the development of a wide range of workers within an economically operated system.

Its base of occupational groupings, predating much of the development work on groupings of skills and occupational training families, aligns well with current vocational preparation developments. While the occupational groupings are substantially different in base from those under development elsewhere, there is no evidence at present to suggest preference for any one model over any other.

100. The system's claims to improve potential for achievement of viability in terms of group size, were supported to some degree. Schemes drawing participants across wider occupational bands are bound to be more readily viable than those drawing on narrower bands given comparable acceptability to the users.

Reluctance to release in the non-traditional areas however remains a threat to viability of TRADEC and other college-based schmes. The strength in drawing in widely different occupations in practice is counteracted at present by the tendency for these to cluster in specific areas, rendering the impact on viability of the wide occupational band less than might be expected. **[127–128; 538–544]**

101. There was some evidence of difficulty encountered, within the colleges, in dealing with schemes which did achieve a wide occupational spread. Maintaining learner-user relevance was something of a challenge in these circumstances. Factors indicated to be important in this were:

- the nature of the occupations considered to be appropriately placed within the grouping. There was some evidence of difficulty with groups which were not internally consistent in terms of roles and functions; **[148–149; 159–161]**
- lack of staffing and availability of resources for the degree of individualised work necessary in some schemes. **[433–459]**

The schemes appeared to operate more successfully in terms of relevance achieved where the learners were clustered in relatively narrow bands, other factors being equal.

102. It was further hypothesised that the factors which had combined to produce the TRADEC system were specific to industrial features of the region, and to the region's organisational infrastructure.

103. Variations by geographical region, industrial structural and social characteristics appear, from the limited evidence available, not to be primary factors in the ability of TRADEC to take hold.

The conditions for successful launching of the TRADEC development as a region appear to be

(a) the existence of 'hungry' colleges
(b) active promotion and co-ordination by the appropriate regional body. **[532–534]**

104. Introduction within individual colleges outside regions formally engaged in the system has faltered more often than not. The first successful experience of this kind received very substantial support from YHAFHE. **[536–537]**

Concluding Observations

105. The location of the TRADEC development within the scope of all three objectives of NTI has already been noted. The proponents of TRADEC clearly consider the claimed adaptability of the system to a wide variety of needs to be its particular strength.

Evidence suggests that TRADEC can potentially align itself satisfactorily with objectives 1 and 2* in respect of the 16–19 age group by providing a vehicle both for the vocational preparation of young adults based in employment and in work experience, and for alignment of further education provision with new programmes and models of skills training. It is clear however, that requirements will need to be placed on its operation in respect of any particular group covered by these objectives, if satisfactory performance of the system in relation to any specific group is to be guaranteed.

106. In the area of Objective 1, in provision for the development of technical skills and knowledge aligning itself with new training models, the 'standards' issue will need to be tackled more convincingly in the light of new concepts of skill. In respect of Objective 2, comprehensive vocational preparation, the system will need to develop its specification requirements for basic skills, its assessment approaches and associated recording and certification instruments, its means of structuring and monitoring elements of experience and, particularly in the case of unemployed young people, its counselling and guidance functions.

107. The system's strengths and weaknesses, on implementation, relative to other modes have indicated those areas which commend the scheme and from which lessons may be drawn, as well as those areas in which the TRADEC system might draw lessons from the experience afforded by other models.

108. The foresight and initiative which has led to the development of a system which in its conception, is so clearly addressed to the 'issues of the day' in education and training has to be admired. Within that context it represents an evolutionary step, but not by any means the end of the line. The time seems ripe for review of its operation and its way forward in the light of accumulated experience and knowledge.

*There is little evidence on which to base judgements about Objective 3, which also lies outside this scope of this investigation.

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Appendix I

EXTRACT FROM

A New Training Initiative: an agenda for action: MSC, 1981

'Our consultative document proposed three major objectives for the nation. These were:

(i) We must develop skill training including apprenticeship in such a way as to enable young people entering at different ages and with different educational attainments to acquire agreed standards of skill appropriate to the jobs available and to provide them with a basis for progression through further learning;

(ii) We must move towards a position where all young people under the age of 18 have the opportunity either of continuing in full-time education or of entering a period of planned work experience combined with work-related training and education;

(iii) We must open up widespread opportunities for adults, whether employed, unemployed or returning to work, to acquire, increase or update their skills and knowledge during the course of their working lives.

The comments we have had show overwhelming support for these three objectives...'

Appendix II

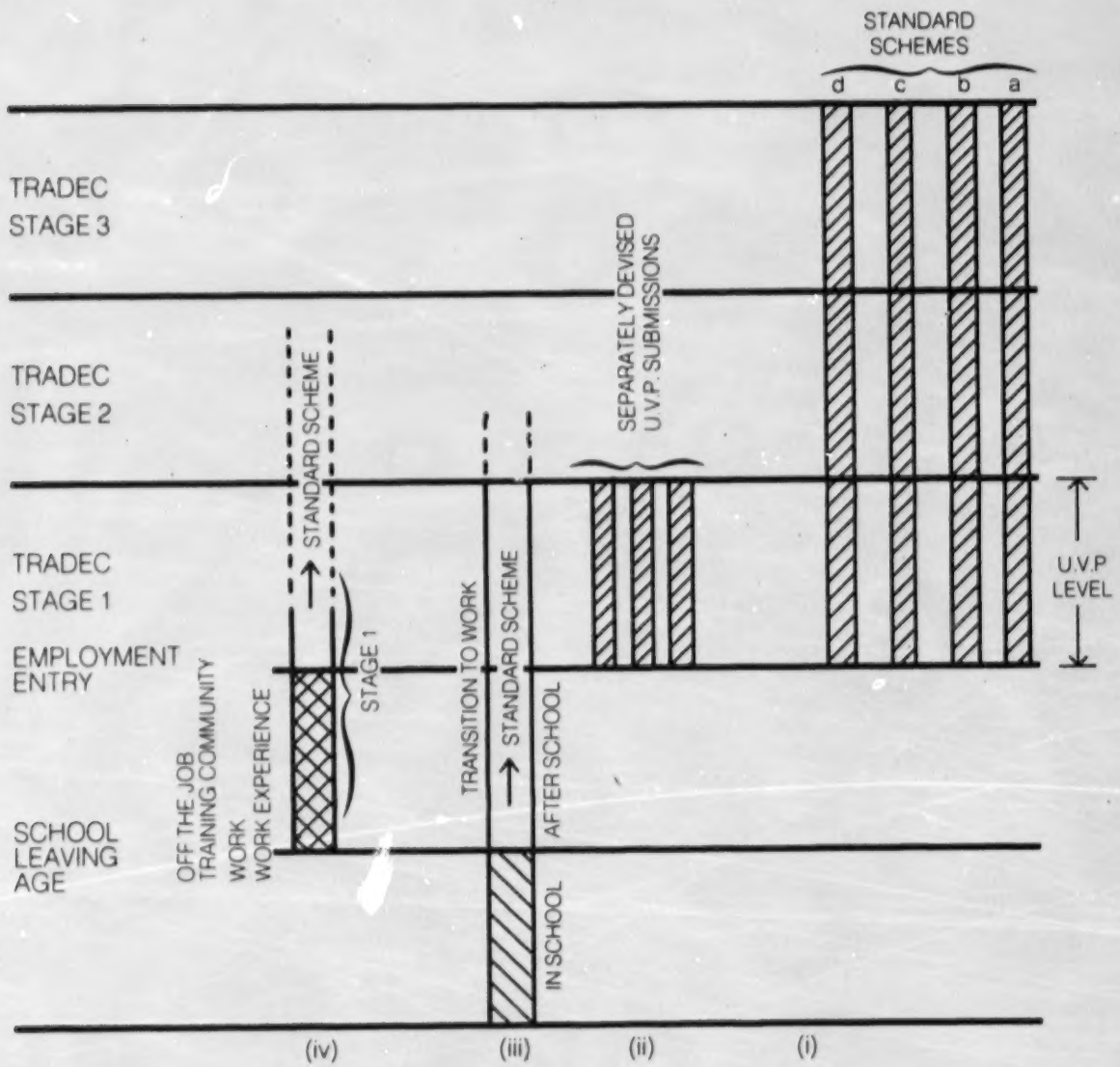
LEARNERS ON TRADEC SCHEMES 1973–82

ENGLAND AND WALES

		1973–4	1974–75	1975–76	1976–77	1977–78	1978–79	1979–80	1980–81	1981–82
MECHANICAL TRADES PRINCIPLES	1	32	104	179	158	154	186	208	140	82
	2	—	16	81	118	107	124	165	146	91
	3	—	—	8	52	79	70	88	109	96
	T	32	120	268	328	340	380	461	395	269
FABRICATION & JOINING TRADES PRINCIPLES	1					56	134	180	128	125
	2					—	36	76	89	47
	3					—	—	35	59	57
	T					56	170	291	276	229
DISTRIBUTION & CONSUMER TRADES PRINCIPLES	1					24	210	236	160	208
	2					—	16	7	52	53
	3					—	—	11	10	18
	T					24	226	254	222	319
COMMERCIAL TRADES PRINCIPLES	1							13	21	22
	2							—	—	14
	3							—	—	
	T							13	21	36
FOOD TRADES PRINCIPLES	1							13	20	7
	2							—	—	
	3							—	—	
	T							13	20	7

Appendix III

APPLICATIONS OF THE TRADEC MODEL
(as proposed by YHAFHE)



ADULT ENTRY: TRADEC schemes are not age-related and each stage is quite suitable for adult entry. However, experienced adults involved in job-change are most likely to be supported for entry to Stage 3.

Appendix IV

MEMBERSHIP OF THE STEERING COMMITTEE

Mr J W Mansell (*Chairman*)
Further Education Unit

Dr K Evans
University of Surrey

Mr J Longden
Keighley Technical College

Mr T G Melling HMI
Department of Education and Science

Miss S McGregor
City and Guilds of London Institute

Dr J Brunton (succeeded by Mrs C Thompson)
Manpower Services Commission

Mr M Watkinson
Tyzacks Ltd., Sheffield

Mr A Wollard
Department of Education and Science

Mr G Olivier (*Secretary*)
Further Education Unit

Appendix V

GLOSSARY OF ABBREVIATIONS

ABC	A Basis for Choice
AUEW	Amalgamated Union of Engineering Workers
BEC	Business Education Council
ITB	Industrial Training Board
NCFE	Northern Council for Further Education.
NFER	National Foundation for Educational Research
NTI	New Training Initiative
SCOTBEC	Scottish Business Education Council
SCOTEC	Scottish Technical Education Council
SLS	Social and Life Skills
TEC	Technical Education Council
TGWU	Transport and General Workers Union
USDAW	Union of Shop, Distributive and Allied Workers
UUD	Unified Vocational Preparation
WEEP	Work Experience on Employers' Premises
YHAFHE	Yorkshire and Humberside Association for Further and Higher Education
YOP	Youth Opportunities Programme

FEU Publications

TRADEC I is one of a number of FEU publications intended to inform teachers and others and to stimulate professional discussion about matters of concern to the FE service.

Other FEU publications relevant to *TRADEC* include:

Experience, reflection, learning: suggestions for organisers of schemes of unified vocational preparation	April 1978
A basis for choice: report of a study group on post-16 pre-employment courses	June 1979
Day release: a desk study	January 1980
Vocational preparation	January 1981
ABC in action: a report from an FEU/CGLI working party on the piloting of "A basis for choice"	September 1981
Curriculum change: on evaluation of TEC programme development in colleges	December 1981
Progressing from vocational preparation: the issues (a discussion paper)	January 1982
NTI: joint statement by MSC/FEU No.1 *General principles*	September 1982
Profiles: a review of issues and practice in the use and development of student profiles	September 1982
Basic skills	November 1982
Computer aided design in FE: some suggestions on the inclusion of CAD topics in Mechanical Engineering courses	November 1982

Copies of these documents (which are free of charge) are obtainable from the Publications Despatch Centre, Department of Education and Science, Honeypot Lane, Canons Park, Stanmore, Middlesex HA7 1AZ.
Tel. No. 01-952 2366 Ext 503.

A complete list of FEU publications is also available from the above address.